

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

|  |  |   |
|--|--|---|
| Applicant's or agent's file reference<br><br>P320A             | <b>FOR FURTHER ACTION</b><br><small>see Form PCT/ISA/220<br/>as well as, where applicable, item 5 below.</small> |   |
| International application No.<br><br>PCT/EP2005/050900         | International filing date (day/month/year)<br><br>01/03/2005   | (Earliest) Priority Date (day/month/year)<br><br>02/03/2004 |
| Applicant<br><br>EPFL ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE |  |   |

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b.  With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2.  Certain claims were found unsearchable (See Box II).

3.  Unity of invention is lacking (see Box III).

4. With regard to the title,

the text is approved as submitted by the applicant.

the text has been established by this Authority to read as follows:

5. With regard to the abstract,

the text is approved as submitted by the applicant.

the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. \_\_\_\_\_

as suggested by the applicant.

as selected by this Authority, because the applicant failed to suggest a figure.

as selected by this Authority, because this figure better characterizes the invention.

b.  none of the figures is to be published with the abstract.

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/EP2005/050900

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 C12Q1/48 C07D473/18

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 C12Q C07D C07H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, CHEM ABS Data, BIOSIS, MEDLINE, EMBASE

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|----------|---|-----------------------|
| X        | WO 02/083937 A (KEPPLER ANTJE ;ECOLE POLYTECH (CH); JOHNSON KAI (CH); GENDREIZIG) 24 October 2002 (2002-10-24)<br>page 8  | 1-47                  |
| X        | DE 199 03 895 A (JOHNSON KAI)<br>3 August 2000 (2000-08-03)<br>the whole document   | 1-47                  |
| X        | JUILLERAT, ALEXANDRE ET AL: "Directed Evolution of 06-Alkyguanine-DNA Alkyltransferase for Efficient Labeling of Fusion Proteins with Small Molecules In Vivo"<br>CHEMISTRY & BIOLOGY , 10(4), 313-317<br>CODEN: CBOLE2; ISSN: 1074-5521, 2003,<br>XP002288298<br>page 313 – page 314 | 1-47                  |

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

## \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*&\* document member of the same patent family

Date of the actual completion of the international search

8 June 2005

Date of mailing of the international search report

17/06/2005

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International Application No

PCT/EP2005/050900

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
|----------|--|-----------------------|
| X        | DAMOISEAUX R ET AL: "Synthesis and applications of chemical probes for human 06-alkylguanine-DNA alkyltransferase" CHEMBIOCHEM - A EUROPEAN JOURNAL OF CHEMICAL BIOLOGY, WILEY VCH, WEINHEIM, DE, vol. 2, no. 4, 2 April 2001 (2001-04-02), pages 285-287, XP001148325<br>ISSN: 1439-4227<br>page 285 - page 287 | 1-47                  |
| X        | WO 97/20843 A (MIDDLETON MARK ROSS ; RAFFERTY JOSEPH ANTHONY (GB); KELLY JANE (GB)) 12 June 1997 (1997-06-12)<br>claims 1,2  | 1-47                  |
| X        | US 5 691 307 A (CHAE MI-YOUNG ET AL)<br>25 November 1997 (1997-11-25)<br>claim 1   | 1-47                  |
| A        | WO 01/85221 A (UNIV DUKE)<br>15 November 2001 (2001-11-15)<br>the whole document   | 44-47                 |
| A        | KEPPLER ANTJE ET AL: "A general method for the covalent labeling of fusion proteins with small molecules in vivo" NATURE BIOTECHNOLOGY, NATURE PUBLISHING, US, vol. 21, no. 1, 20 January 2003 (2003-01-20), pages 86-89, XP002231034<br>ISSN: 1087-0156<br>page 86  | 1-47                  |
| P,X      | WO 2004/031405 A (BIERI CHRISTOPH ; ECOLE POLYTECH (CH); JOHNSSON KAI (CH); KINDERMANN M) 15 April 2004 (2004-04-15)<br>claim 1  | 1-47                  |

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International Application No

PCT/EP2005/050900

| Patent document cited in search report | Publication date |    | Patent family member(s)   | Publication date   |
|--|------------------|----|---|--|
| WO 02083937                            | A 24-10-2002     |    | CA 2443570 A1<br>CN 1527941 A<br>EP 1410023 A2<br>WO 02083937 A2<br>JP 2004532028 T<br>US 2004115130 A1<br>ZA 200307442 A   | 24-10-2002<br>08-09-2004<br>21-04-2004<br>24-10-2002<br>21-10-2004<br>17-06-2004<br>21-04-2004   |
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| WO 0185221                             | A 15-11-2001     |    | AU 7290901 A<br>WO 0185221 A2   | 20-11-2001<br>15-11-2001   |
| WO 2004031405                          | A 15-04-2004     |    | AU 2003271669 A1<br>WO 2004031405 A1  | 23-04-2004<br>15-04-2004   |